

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 913153 Component Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- GAL)

SAMPLE INFORMATION method GFL0101894 GFL0101974 GFL0101958 Sample Number **Client Info** 27 Feb 2024 Sample Date Client Info 30 Jan 2024 27 Dec 2023 Machine Age hrs Client Info 2586 2409 2198 Oil Age hrs Client Info 177 505 294 Oil Changed **Client Info** Not Changd Changed Not Changd Sample Status NORMAL NORMAL NORMAL CONTAMINATION Fuel >5 WC Method <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS 7 >80 2 8 Iron ppm ASTM D5185m ASTM D5185m >5 0 0 Chromium ppm <1 Nickel n ppm ASTM D5185m >2 <1 0 Titanium ppm ASTM D5185m <1 <1 <1 Silver ASTM D5185m >3 0 0 <1 ppm >30 3 7 7 Aluminum ppm ASTM D5185m Lead ASTM D5185m >30 0 ppm <1 <1 Copper ppm ASTM D5185m >150 <1 <1 <1 0 Tin ppm ASTM D5185m >5 <1 1 Vanadium ppm ASTM D5185m 0 <1 0 Cadmium 0 0 0 ASTM D5185m ppm ADDITIVES Boron mag ASTM D5185m 0 6 3 5 Barium ASTM D5185m 0 0 0 0 ppm 56 58 Molybdenum ASTM D5185m 60 53 ppm ASTM D5185m 0 Manganese ppm <1 <1 <1 Magnesium ASTM D5185m 1010 922 917 1044 ppm Calcium ppm ASTM D5185m 1070 1048 1034 1191 Phosphorus ASTM D5185m 1150 1037 1077 1022 ppm Zinc ppm ASTM D5185m 1270 1233 1273 1199 Sulfur ASTM D5185m 2060 3025 3052 3137 ppm CONTAMINANTS Silicon ASTM D5185m >20 4 4 18 ppm Sodium ASTM D5185m ppm 1 1 <1 Potassium ASTM D5185m >20 3 11 11 ppm **INFRA-RED** % 0.2 0.3 0.2 Soot % *ASTM D7844 >3 Nitration Abs/cm *ASTM D7624 >20 6.4 9.0 7.5 Sulfation *ASTM D7415 >30 18.2 19.2 20.4 Abs/.1mm FLUID DEGRADATION *ASTM D7414 >25 14.2 15.9 17.3 Oxidation Abs/.1mm

Base Number (BN) mg KOH/g ASTM D2896 9.8

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Fluic

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

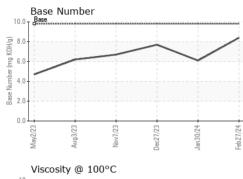
7.7

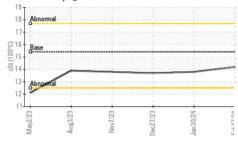
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8.4



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		VISUAL		method				history2
		White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
		Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
		Silt	scalar	*Visual	NONE	NONE	NONE	NONE
		Debris	scalar	*Visual	NONE	NONE	NONE	NONE
		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Dec27/23	Jan 30/24 Feb 27/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Deci	Jan	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
		Free Water	scalar	*Visual		NEG	NEG	NEG
		FLUID PROP	PERTIES	method	limit/base	current	history1	history2
		Visc @ 100°C	cSt	ASTM D445	15.4	14.2	13.8	13.7
· · · · · · · · · · · · · · · ·		GRAPHS						
		Ferrous Alloys						
7/23 -	0/24 -	35 - iron						
Dec27/23	Jan30/24	30 - nickel						
		25						
		튭 20						
		15						
		10-						
		5-						
		123	//23)/24	//24			
		May2/23 Aug3/23	Nov7/23 Dec27/23	Jan30/24	Feb27/24			
		Non-ferrous Met	tals					
		10 T						
		copper						
		8 6						
		8 -						
		8 6						
		8 6						
		8 6 Wdg						
		8 6 4 2 0	123	124	124			
		8 6 Wdg	Nov1/23	- 42/0E/mP	Feb27/24			
		Viscosity @ 100 ^o		Jan30.24	Feb277/24	Base Number		
		udd Uiscosity @ 1000		- 4200EneL	Lika	Base Number		
		Viscosity @ 100 ^o		4205neb	10.	Base		
		Uiscosity @ 100		-12024	10.	0 - Base		
		Uiscosity @ 100		Jan 30/24	10.	0 - Base		
		Viscosity @ 100 ¹⁹		- 42.06.meL	10.	0 - Base		
		Base 0 17 16 17 16 15 14 12 12 14 12 12 12 12 12 12 12 12 12 12		- 4200Erec	10.0 (0)HOX 60.1 (0)HOX 60.1 (0)HOX 80.0 (0)HOX 80.0 (0 - Base 0		
		Uiscosity @ 1000 Base 0 0 0 0 0 0 0 0 0 0 0 0 0		-1000 mer	10. (б)НОХ Ш јад	0 - Base 0		
		Uiscosity @ 1000 Base 0 0 0 0 0 0 0 0 0 0 0 0 0	°C		10.1 (b) HOX 66.1 (b) HOX 66.1 (b) HOX 66.1 (b) HOX 66.1 (c) HOX 66.1			
		Uiscosity @ 1000 Base 0 0 0 0 0 0 0 0 0 0 0 0 0	°C		10.1 (b) HOX 66.1 (b) HOX 66.1 (b) HOX 66.1 (b) HOX 66.1 (c) HOX 66.1			n30/24
		Uiscosity @ 100'			10.1 (0) (0) (0) (0) (0) (0) (0) (0) (0) (0)		Nov7/23	Jan 30/24
4	Laboratory	Viscosity @ 100 ¹⁹ b b c c c c c c c c c c c c c	•C	bn Ave., Cary	10.1 (0)HOX Bull Jaquing 8.1 (0)HOX Bull Jaquing 8.2 (0)HOX BULL Jaquing 8.2 (D Base D C C C C C C C C C C C C C C C C C C C	Vironmental - 89	94 - Ada Hauli
	Sample No.	Viscosity @ 100 ¹⁹ ¹⁹ ¹⁰ ¹⁹ ¹⁰ ¹⁹ ¹⁰	°C EZ/(ANN 501 Madisco Recei	bn Ave., Cary ived : 28	10.1 (0)HOX Dul Jaquing egg 2.1 (0)HOX DUL Jaquing egg 2.1 (1)HOX DUL Jaqui	D Base D C C C C C C C C C C C C C C C C C C C	Nov7/23	94 - Ada Haulii badway, Suite
	Sample No. Lab Number	Viscosity @ 100 ¹⁹ Viscosity @ 100 ¹⁹ base Coolits	°C EZ/(row 501 Madisco Recei Teste	br Ave., Cary ived : 28	10.1 (0)HOX Bull sequence 10.1 (0)HOX Bull sequence 10.1 (0)HOX Bull sequence 2.1 (0)HOX Bull sequence (0)HOX Bull sequence (0)HO	GFL En	Vironmental - 89	9 4 - Ada Hauli badway, Suite Ada, C
ificate L2367	Sample No.	Viscosity @ 100 Viscosity @ 100 Viscos	°C EZ/(row 501 Madisco Recei Teste	br Ave., Cary ived : 28	10.1 (0)HOX Dul Jaquing egg 2.1 (0)HOX DUL Jaquing egg 2.1 (1)HOX DUL Jaqui	GFL En	EZULANA EZULANA Vironmental - 89 1904 North Bro	94 - Ada Hauli badway, Suite

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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